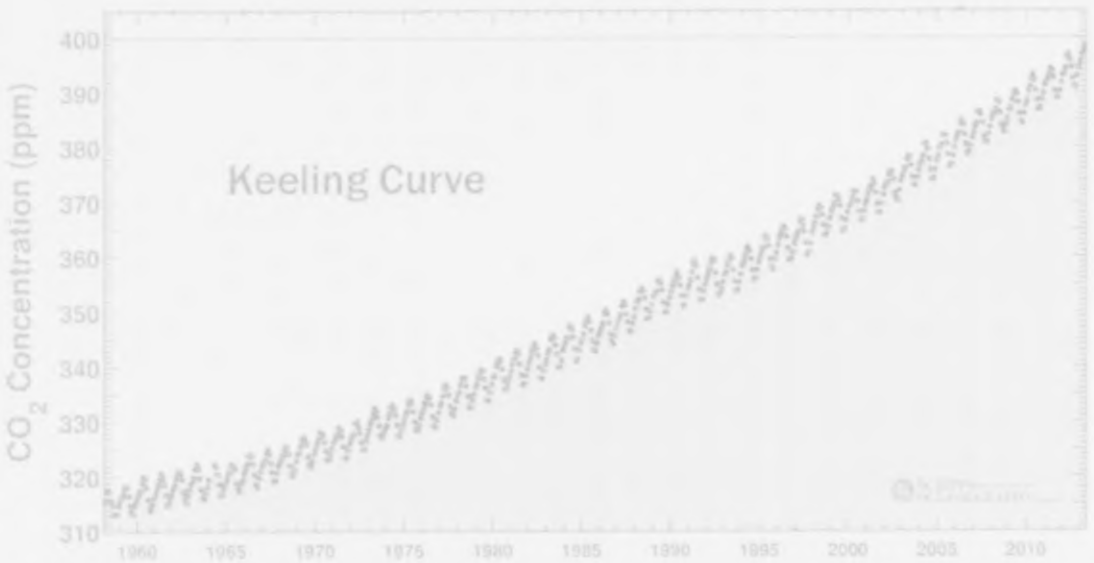
Failing Our Future

Review of the Ontario Government's Climate Change Action Plan Results



Annual Greenhouse Gas Progress Report 2013
Environmental Commissioner of Ontario

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June 2013

Environmental
Commissioner
of Ontario

Commissaire à
l'environnement
de l'Ontario

Gord Miller, B.Sc., M.Sc.
Commissioner

Gord Miller, B.Sc., M.Sc.
Commissaire

June 2013

The Honourable Dave Levac
Speaker of the Legislative Assembly of Ontario
Room 180, Legislative Building
Legislative Assembly
Province of Ontario
Queen's Park

Dear Speaker:

In accordance with Section 58.2 of the *Environmental Bill of Rights, 1993*, I am pleased to present the Annual Greenhouse Gas Progress Report 2013 of the Environmental Commissioner of Ontario for your submission to the Legislative Assembly of Ontario. This Annual Report is my independent review of the Ontario government's progress in reducing greenhouse gas emissions.

Sincerely,

Gord Miller
Environmental Commissioner of Ontario

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Introduction

As required by the *Environmental Bill of Rights, 1993*, (*EBR*) the Environmental Commissioner of Ontario (ECO) reports annually to the Ontario Legislature on the progress of activities in the province to reduce greenhouse gas (GHG) emissions. As part of this reporting requirement, the ECO is to review any annual report on GHG reductions or climate change published by the government during the year. This report constitutes the ECO's 2013 annual report as required by the *EBR*. It includes a brief discussion of the government's 2012 Climate Change Action Plan (CCAP) progress report Climate Vision released in November 2012; too late in the ECO's review cycle to be included in our December 2012 annual report.

The ECO has been constantly challenged in reviewing progress on this file in the context of a government whose approach is characterized by delayed reporting dates and lack of content. In addition, the government does not produce its own data on GHG emission reductions but relies on Environment Canada's National Inventory Report (NIR) which is released 16 months after the year of reporting.[1] Accordingly, the ECO has chosen to release this report now, to provide the Legislature with the most current analysis of the status of Ontario's GHG emissions situation. Our next progress report is scheduled for the spring of 2014 and will include a review of any CCAP progress report that is released this year.

This year's report is brief for two reasons. First, our last report, A Question of Commitment, released in December 2012, provided a comprehensive, sector-specific overview of the major GHG reduction initiatives undertaken by the government over the 2011-2012 period. Second, since the release of that report, there has been limited provincial action on the climate change policy file and, accordingly, little progress upon which to report. In part, the lack of provincial government activity may be due to the prorogation of the Legislature that was triggered in October 2012 and lasted until January 2013. It is the ECO's full expectation that the government will give renewed attention to this file now that the legislative calendar has resumed.

[1] For example, the most recent National Inventory Report, released in April 2013, includes 2011 data.

Progress to Date

Government Targets

In 2007, the provincial government established three GHG reduction targets:

- 6 per cent below 1990 levels by 2014 (to approximately 166 megatonnes or Mt)[2];
- 15 per cent below 1990 levels by 2020 (to approximately 150 Mt); and
- 80 per cent below 1990 levels by 2050 (to approximately 35 Mt).

Accordingly, these targets lie at the heart of, and inform, the provincial policy framework on climate change. In November 2012, the government quietly released Climate Vision, its fourth climate change progress report since the August 2007 publication of Go Green: Ontario's Action Plan on Climate Change.

Review of Climate Vision

Climate Vision provides a broad overview of government activities in all areas of the economy to reduce emissions, but provides very little information on the actual reductions achieved. This information is contained within the companion technical appendix, which also includes the status of measures undertaken to adapt to future climate change. The technical appendix indicates that current efforts are projected to achieve 91 per cent of the reductions necessary to meet the 2014 target. Looking forward six years, however, projections are less than encouraging, as the government estimates that all current initiatives (both provincial and federal) will only achieve 60 per cent of the reductions required to meet the 2020 target.

Furthermore, Climate Vision fails to outline a strategy to either close this gap or, for that matter, to even bend the projected emissions curve downwards. Instead, with all of the policies and initiatives currently in place, overall emissions are projected to continue to

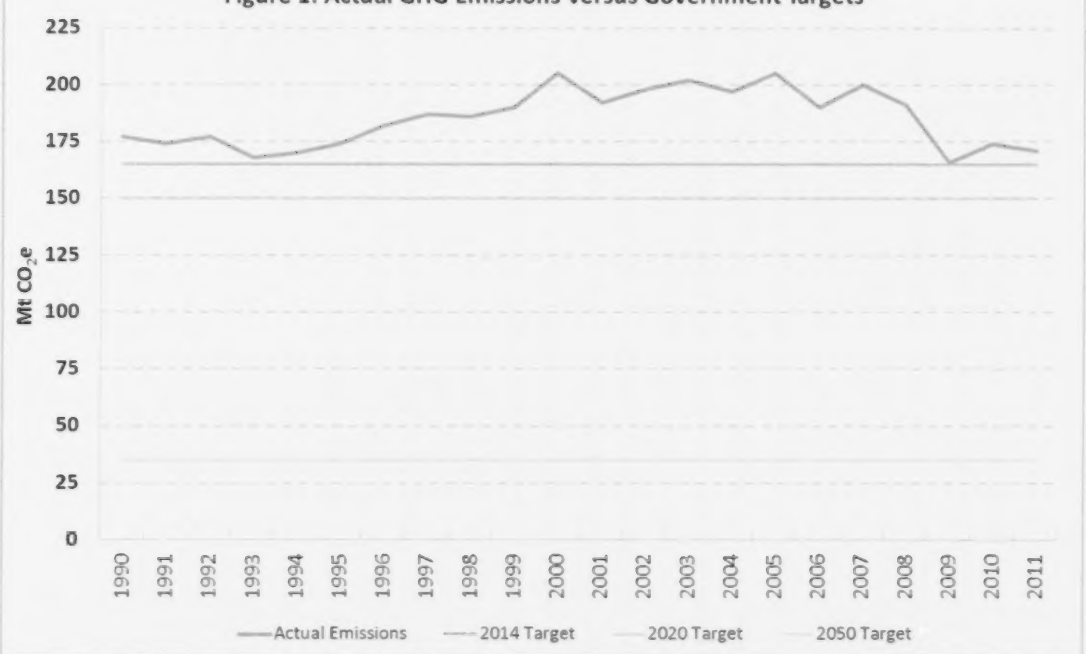
[2] The 166 Mt target for 2014 represents a 6 per cent reduction from 177 Mt, the most recent data for 1990 emissions from Environment Canada's 2013 National Inventory Report (NIR). Due to Environment Canada's restatement of emissions in its most recent NIR, the 1990 emissions value of 177 Mt is 1 Mt higher than the 176 Mt value reported in Environment Canada's 2012 NIR.

rise and, by 2030, to reach approximately 190 Mt. While the rate of increase is lower than it would otherwise have been in the absence of any policies, the trajectory is still upward. This is not the direction in which we should be heading.

Total Emissions in 2011

In conjunction with the global recession of 2008-2009, Ontario's emissions dropped significantly in 2009 to 166 Mt, the lowest level since 1990. According to the most recent data, Ontario's emissions over the past two years have rebounded and reached 171 Mt in 2011 (see Figure 1). This rebound is unsurprising, given that the economy has seen modest growth over the same period, as measured by growth in real gross domestic product (GDP). Following the same pattern as global trends, Ontario's real GDP growth dropped 3.2 per cent in 2009. Since then, it has trended upwards, and grew by 3 per cent in 2010 and 2.1 per cent in 2011.

Figure 1: Actual GHG Emissions versus Government Targets



Source: Environment Canada. (2013) *National Inventory Report – Greenhouse Gas Sources and Sinks in Canada 1990-2011.* Targets are from *Go Green: Ontario's Action Plan on Climate Change,* August 2007.

In Ontario, increased manufacturing output and international exports in the automotive, machinery and metal sectors have contributed to these economic increases. Continued moderate economic growth is predicted over the next three years (1.9 per cent in 2013, 2.3 per cent in 2014 and 2.4 per cent in 2015). Given the current linkage between economic growth and GHG emissions, a growing economy will result in increased future emissions. However, the rate of emissions growth will likely be lower as the economy decarbonizes; over the past five years, the delinking of economic growth and GHG emissions has reduced Ontario's GHG emissions per dollar of GDP from 0.334 Mt/billion dollars of GDP in 2007 to 0.283 Mt/billion dollars of GDP in 2011.

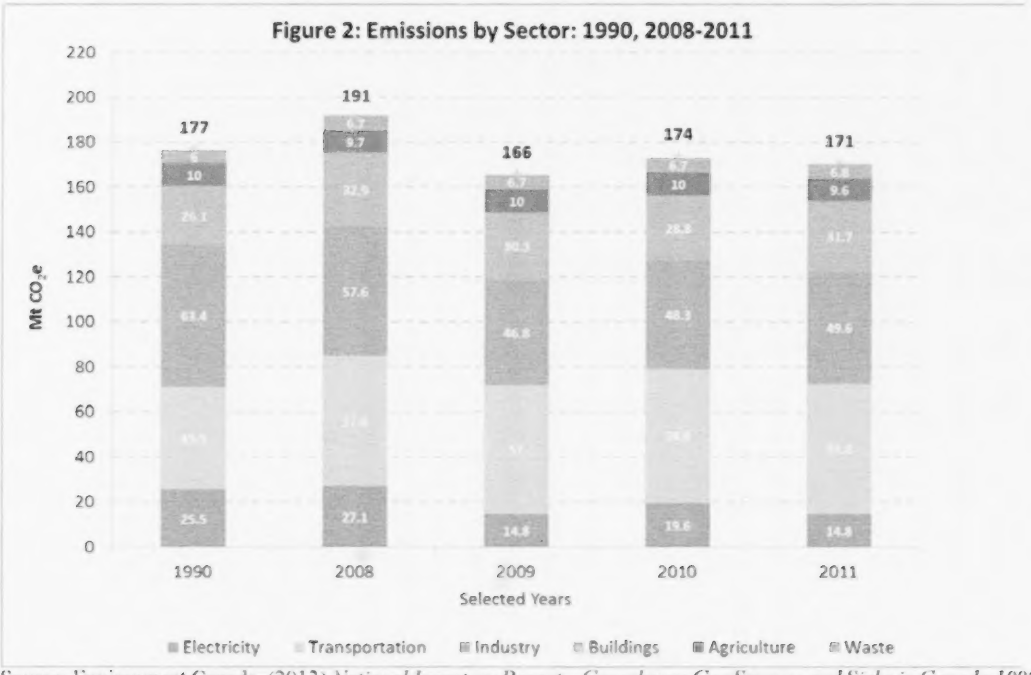
A Note on the Numbers

It is important to note that this report uses the most up-to-date data as calculated by Environment Canada. In conducting these calculations, Environment Canada adjusts yearly emission totals as improvements to inventory methodologies and updates are developed. For example, according to the 2013 NIR, the restated total for Ontario's 2010 emissions is 174 Mt, 3 Mt higher than was reported in the 2012 NIR. While the ECO accepts that these restatements are important "to avoid confounding a methodological change with an actual change in GHG emissions or removals"[3], it nevertheless makes it challenging for the reader to determine the extent to which government action to influence GHGs is having an impact.

Emissions by Sector

Greenhouse gas emissions are reported on a sectoral basis. Figure 2 illustrates the breakdown of emissions from these six sectors: transportation, industry, buildings, electricity, agriculture and waste.

[3] Environment Canada. 2013. *National Inventory Report 1990-2011, Greenhouse Gas Sources and Sinks in Canada*, The Canadian Government's Submission to the UN Framework Convention on Climate Change, Part 1, p. 211.



Source: Environment Canada. (2013) *National Inventory Report – Greenhouse Gas Sources and Sinks in Canada 1990-2011.*

Transportation – 58 Mt

At 58 Mt, the transportation sector continues to be responsible for the largest amount of GHG emissions in Ontario. Of this amount, more than 45 Mt was from road transportation alone. Not surprisingly, passenger vehicles remain the greatest contributor to GHG emissions in the road transportation sector, even despite recent federal regulatory initiatives to reduce GHG emissions from light-duty vehicles. The first regulation established GHG emission standards for 2011 – 2016 model year light-duty vehicles (i.e., cars, vans and pick-up trucks). In December 2012, the federal government proposed standards to further reduce emissions from 2017 – 2025 model year vehicles.

The federal government projects that the average fuel efficiency of new passenger vehicles will increase by 57 per cent as a function of these regulations, and these improvements in fuel efficiency will reduce overall GHG emissions compared to business-as-usual projections. However, given that the new regulations only took effect in 2011, and vehicle stocks turn over every 10 – 15 years, the impact of these regulations will only gradually be reflected in Ontario's passenger transportation emission totals over

the next decade or so and with the added proviso that the fleet size doesn't expand substantially.

Freight vehicles represent a growing segment of transportation-related GHG emissions. To address this trend, a new federal regulation was issued in February 2013 that establishes GHG emission standards for new on-road heavy-duty vehicles for the 2014 – 2018 model years. As with passenger vehicles, the emissions reduction impact of this regulation will not be realized for many years to come and is dependent on fleet size.

Along with the fuel efficiency measures being undertaken by the federal government, a key tool to reduce passenger vehicle emissions is the expansion of public transportation options to promote a modal shift from automobiles to transit. Over the past several years, there has been a growing concern, driven by severe traffic congestion problems, regarding the need to move forward with enhanced public transit, particularly in the Greater Toronto and Hamilton Area. One barrier to progress on this file has been funding constraints. At the time of writing, various organizations, such as the Toronto Region Board of Trade and CivicAction, were devoting significant time and energy to assessing various funding alternatives.

As well, Metrolinx was engaged in a consultation process to assist with the development of its investment strategy – a document scheduled for release by June 2013 that is to propose "revenue generation tools that may be used by the province or the municipalities"[4] to implement Metrolinx's regional transportation plan. Much discussion has occurred regarding the need for bold leadership on this file and the ECO reiterates these calls. Hard decisions will need to be made, but continuation of the status quo is no longer an option.

Industry – 49.6 Mt

As shown in Figure 2, following a nearly 11 Mt drop in industrial emissions between 2008 and 2009 brought on by the recession, GHG emissions from the industrial sector rebounded nearly 3 Mt by 2011. Despite these fluctuations, the industrial sector remains

[4] Section 32.1, *Metrolinx Act, 2006*.

the second largest source of GHG emission in the province. Therefore, it is extremely important that the government put in place an emissions reduction policy and program to address this sector.

In January 2013, the Ministry of the Environment posted a policy proposal on the Environmental Registry seeking stakeholder input on a discussion paper related to the design and development of an industrial GHG reduction strategy, with a proposed reduction target of five per cent over five years. This paper joins two earlier discussion papers (posted as proposal notices on the Registry in December 2008 and May 2009) focused on developing a cap-and-trade system for Ontario.

Buildings – 31.7 Mt

Buildings represent the third largest source of GHGs after transportation and industry. In 2010, Ontario added 60,433 dwelling units to its housing stock and, in 2011, another 67,821 units. Despite a growth in dwelling units that has averaged 62,000 units per year over the 2009 to 2011 period, emissions from the sector have remained relatively constant. Efficiency improvements made during the 2006 Ontario Building Code (OBC) review cycle no doubt contributed to keeping emissions associated with the use of natural gas for space and water heating constant while the number of dwelling units increased.

The ECO has previously noted that Ontario's microFIT program has created a perverse incentive that represents a key barrier to reducing GHGs from buildings. The program provides financial incentives for solar photovoltaic (PV) electricity generation to the exclusion of solar thermal systems for heating water. As the overwhelming majority of buildings in Ontario rely on natural gas for water heating, the opportunity to reduce these emissions is being lost. The ECO has recommended that the government address this shortcoming by amending the solar PV tariff so as not to compete with the financial and GHG reduction benefits of installing solar thermal systems.

In November 2012, the OBC was amended to make the consideration of GHG emissions an explicit objective of the OBC. This has contributed to making the OBC one of the more progressive building and construction codes in North America. The ECO applauds

this development and, given the direct link between natural gas consumption and the release of GHGs noted above, reiterates our position that the OBC needs to be reviewed more frequently than the current five-year cycle; a shorter review period would help to ensure that improvements in building technology, assembly, and heating, ventilation and air conditioning equipment – as well as renewables – can be accommodated in the Code to accelerate the adoption of energy efficiency improvements and reduce GHG emissions.

Electricity – 14.8 Mt

Figure 2 demonstrates that the electricity sector in Ontario continues to decarbonize. Emissions from electricity generation decreased from almost 20 Mt in 2010 to just under 15 Mt in 2011. However, these amounts (sourced from the 2013 NIR) do not represent all emissions from electricity generation in the province. As the ECO has previously noted, electricity sector emissions, as reported in the NIR, only include emissions from utility electricity generation and do not include emissions resulting from non-utility (industrial) generators (NUGs) that rely primarily on natural gas. These emissions are instead assigned to the appropriate industrial sector in the NIR tables.

Based on recent data from the Canadian Industrial Energy End-Use Data and Analysis Centre (CIEEDAC) it would appear the NIR underreports total GHGs from electricity generation in Ontario by at least 700 Kt (or 0.7 Mt). The number could be higher as the CIEEDAC report notes that only generators larger than 500 kW are counted in their reporting.

One troubling aspect of the non-utility generation in Ontario is that much of the electricity is generated during periods when it is not needed. The power purchase agreements of many of these generators allow them to sell to the grid at their discretion. So, during periods of surplus baseload generation we are often unnecessarily producing about 1,000 MW of non-utility gas-fired generation with the ensuing GHG emissions.

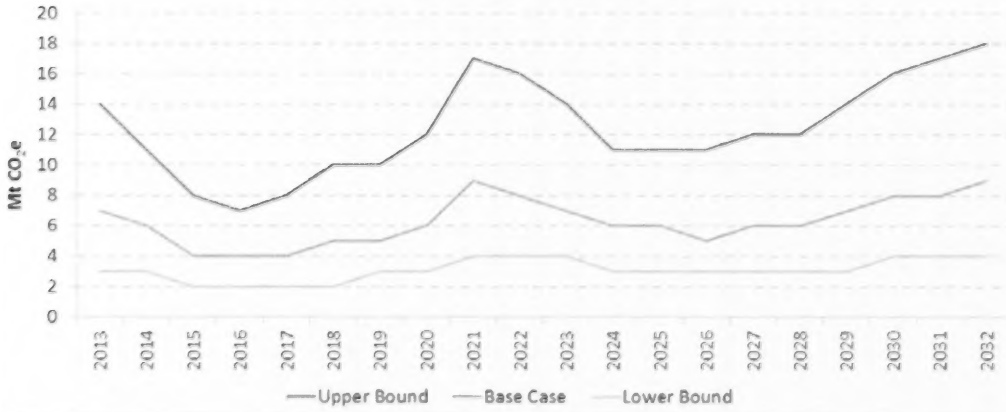
In the past, Environment Canada has not provided electricity GHG emissions broken down by fuel type in its NIR reports. The ECO is pleased to see, therefore, that this information was provided in this year's report. Between 2010 and 2011, emissions

associated with coal use dropped by nearly two-thirds (from 12.1 Mt to 4.1 Mt). The recent announcement that Ontario will stop burning coal at two of its largest coal-fired electricity generating stations – in Nanticoke and Lambton – by the end of December 2013 (a year ahead of schedule) means that only a smaller coal-fired plant in Thunder Bay will remain in operation, scheduled to stop burning coal by the end of 2014.

The phase out of coal-fired generation puts the electricity sector on track to achieve the emissions reductions envisaged in Ontario's Long-Term Energy Plan (LTEP) over the short term. However, the most recent NIR data show that emissions from burning natural gas for utility electricity generation have increased by nearly 44 per cent (from 7.4 Mt to 10.6 Mt) between 2010 and 2011. According to the Ontario Power Authority (OPA), gas generation will serve as a swing resource going forward and will play a large role in maintaining the balance between supply and demand, especially during the period of nuclear plant refurbishment expected around 2020/21.

The role that natural gas is projected to play, and the contribution it will make towards Ontario's electricity GHG emissions profile, is illustrated in three different emissions trajectories developed by the OPA and released this year. As shown in the projections in Figure 3, GHGs emitted in 2030 could range from as low as 4 Mt to as high as 16 Mt, depending on the amount of electricity generated through the use of natural gas.

Figure 3: OPA Emissions Scenarios



Source: Ontario Power Authority, *CO_2 Emissions from Electricity Generation in Ontario, Revision 1*, February 14, 2013.

By contrast, the LTEP, developed by the Ministry of Energy (ENG) in 2010, projected that GHG emissions from the electricity sector will be on the low end of this range – around 5 Mt by 2030.

The OPA data is three years more recent than the LTEP and this may explain the greater ranges noted by the OPA. In this context, the ECO is encouraged that ENG plans to update the LTEP which should close this discrepancy. However, the government must do everything in its power to ensure that the future restructuring of the electricity sector is undertaken in such a way to prevent the high usage of natural gas implicit in the OPA's upper emissions scenario. Much of this will depend on the timing and extent of the refurbishment of Ontario's nuclear facilities.

Nevertheless, this situation argues strongly for better alignment and planning between the OPA and ENG on the one hand, as well as closer co-ordination between power system planning and the development and roll-out of a revised and comprehensive GHG reduction plan. The recently announced intention by the government to update the LTEP presents a perfect opportunity for this much needed co-ordination and alignment on energy planning and climate change mitigation.

Agriculture – 9.6 Mt

Similar to other years, emissions from the agricultural sector continued to remain relatively constant, with a slight drop to 9.6 Mt. As the ECO indicated in our 2012 Greenhouse Gas Progress Report, the current voluntary approach employed by the government is likely to be insufficient to drive the changes necessary to reduce emissions from this sector.

Waste – 6.8 Mt

With just a 0.8 Mt increase from 1990 to 2011, emissions from the waste sector over the past 20 years have remained essentially flat. Nevertheless, almost 90 per cent of waste emissions are due to methane releases from landfill sites and this continues to be an area of major concern for the ECO. As discussed in our 2012 Greenhouse Gas Progress Report, given concerns related to the accuracy of estimated methane capture rates and the

implications of a higher warming potential for methane, the ECO questions whether landfills may actually be emitting twice the amount of emissions than are being reported. In light of this concern, the ECO is currently reviewing the emissions data records from the 31 landfill sites that are subject to the landfill gas reporting requirements of O. Reg. 347 – General Waste Management, made under the *Environmental Protection Act*. The ECO will comment on our findings in a future report.

ECO Comment

Over the past several years there has been a lack of bold leadership on climate change mitigation policy in Ontario. In light of this, the ECO is pleased to see a renewed effort to engage industrial stakeholders in the development of an emissions reduction program and was encouraged to see MOE release a discussion paper on the development of an industrial GHG reduction strategy. However, the proposed reduction target in this strategy of five per cent over five years amounts to only about 2.5 Mt. This is only a small contribution to the 21 Mt of GHG reductions needed to achieve the 2020 target. With less than seven years to reach 150 Mt, the ECO believes that a much more aggressive effort to reduce the growth in industrial emissions is required. As the ECO has indicated repeatedly, this effort must include a market mechanism that puts a clear and transparent price on carbon emissions to help support the transition to a low-carbon economy.

As mentioned above, according to the government, while growth in emissions is easing, they are still projected to increase to 190 Mt by 2030. This is due in part to an increased reliance on natural gas-fired generation in the electricity sector as nuclear plants undergo refurbishment. While not a complete solution to this challenge, the ECO would encourage the Ministry of Energy to work with the Ministry of the Environment to assess the ability of pricing signals, demand response, energy storage, and combined heat and power systems to shift electricity usage away from carbon-intensive peaking generation, and estimate the contribution this could make to meeting Ontario's GHG targets.

Ontario's continued predicted growth in GHG emissions is hard to reconcile with the government's goal to reduce emissions to 150 Mt by 2020 and to 35 Mt by 2050. Much more needs to be done to close this gap. In the absence of a renewed effort, the government is failing our future. The window of opportunity to meet a 450 parts-per-million world and to limit the rise in global temperatures to no more than 2°C is closing rapidly. Ontario needs to get out ahead of these developments. In particular, Ontario's electricity sector has been significantly decarbonized, representing an excellent source of low-carbon electricity to reduce emissions in other sectors such as transportation.

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